

MONTANA STATE DEPARTMENT OF FISH AND GAME
FEDERAL AID IN FISH RESTORATION SECTION
HELENA, MONTANA

JOB COMPLETION REPORT
INVESTIGATIONS PROJECTS

State of Montana

Project No. F-21-R-2

Name Evaluation of DDT Spraying

Job No. II

Title A Test Stream Study With Con-
trolled Application of DDT to
Determine Effects on Fish and
Fish-food Organisms.

Period June 1, 1957 - April 30, 1958

Abstract:

Trail creek has been selected as the test stream. A four mile section of this stream was chosen as the study area. Ten fish-food organism stations and six shocking stations have been established. Bi-monthly collections of fish-food organisms have been made since December 1957.

Objectives:

Extensive studies have been and are being made on trout streams by a cooperative study of the Montana Fish and Game Department and the U. S. Forestry Service. These extensive studies are being made to determine effects of forest spraying with DDT on fish and fish-food organisms. To facilitate evaluation of these extensive studies it is considered necessary to conduct a detailed investigation on a single stream exposed to a known concentration of DDT. It is the objective of this job to make detailed observations on fish and fish-food organisms of a test stream before, during and after application of a known concentration of DDT.

Techniques Used:

A survey was made of streams in the Bozeman area that would fit the requirements of a suitable test stream.

An intensified study section was selected on the test stream. In this study section the point of application for the DDT, insect and shocking stations were established.

Fish-food organisms were collected bi-monthly with a Surber square foot bottom sampler. The collections were field sorted and preserved in 80 per cent alcohol.

Findings:

Spanish Creek located in Gallatin County was tentatively selected as the test stream in June, 1957. Preliminary surveying of fish-food organism and shocking stations were completed by July 1, 1957. During July a property transfer in this area resulted in a land ownership problem and the use of this stream for experimental use had to be discontinued.

Trail Creek was chosen as the test stream in November, 1957. Permission was granted by the ranchers on Trail Creek to use it as the test stream over a three year period. A four mile section of Trail Creek (T. 3S-T.4S .R.8E. Sec. 35,2,11, Park County) about midway between the source and the mouth was selected as the study section.

In the study section a riffle area suitable for the application of DDT was selected. Within a mile upstream from the point of application two insect and two shocking stations were established as controls. From the point of application to a point one mile downstream six insect and four shocking stations were established. In addition insect collecting stations were established at points two and three miles below the point of application.

All insect collecting stations are located on riffle areas ranging from 50 feet to 100 feet in length.

Cooperation from the local Game Warden was obtained to control the beaver population in the stream from building dams in the first two miles of the study section.

Analysis of the stream bottom samples to species has not been completed.

Recommendations:

That the test stream be further studied before, during and after application of a known concentration of DDT.

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Approved by

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Date April 19, 1958